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Pipeline Quality Biogas: Guidance Document for Dairy Waste, Wastewater Treatment Sludge and Landfill Conversion  
DTPH56-08-T-000018

The **Pipeline Quality Biogas: Guidance Document for Dairy Waste, Wastewater Treatment Sludge and Landfill Conversion Project (DTPH56-08-T-000018)** is aimed at creating a draft Guidance Document bounding the analytical requirements of biogas from anaerobic digestion of wastewater and landfill biomass for introduction into natural gas pipeline systems. The Guidance Document will supplement FERC guidance for natural gas, focusing on safe introduction of a new interchangeable fuel, biogas, to existing pipeline supplies for general distribution within the US and Canada. The objectives of this project are to: 1) execute a laboratory testing program to evaluate raw and cleaned wastewater and landfill biogas to assess quality, safety, and compatibility with existing supplies and pipeline delivery infrastructure, 2) prepare a draft Guidance Document, 3) investigate the heating values of cleaned biogas, 4) identify conditioning units suitable for appropriate cleanup of raw biogas to cleaned, interchangeable biomethane parameters and, 5) Project Management. GTI is now conducting a parallel program *specifically* for dairy waste conversion (*Pipeline Quality Biomethane: North American Guidance Document for Dairy Waste Conversion*). This GTI work is offered as full co-funding. The DOT/PHMSA project focuses particularly on landfill and wastewater treatment biogas. Therefore, the Final Deliverable Report to DOT for this complete project will culminate in a comprehensive Guidance Document integrating biogas quality standards for *Pipeline Quality Biomethane* from wastewater sludge, landfill biogas and dairy waste.

During this 2nd quarter of the project, GTI is revising and finalizing the co-funding GTI project which focuses specifically on dairy waste biomethane Guidance.

Pertaining to the PHMSA project, work against the following specific Tasks were executed:

Task 1 - GTI has conducted extensive sampling of landfills and wastewater treatment facilities in the US and Canada. This includes sampling of raw and cleaned biogas, destined for injection within natural gas pipeline networks. Samples of natural gas were also obtained. Multiple sampling events from sites were conducted, to obtain a time study of the biogas and biomethane. Analysis of samples was conducted, although thorough validation of results is ongoing. No interim results are available during this period

Task 4 – A thorough review of conditioning processes available for cleanup of the raw biogas has been initiated.

Task 5 - Work on this task is ongoing.

Dr. Diane Saber

[diane.saber@gastechnology.org](mailto:diane.saber@gastechnology.org)

847.768.0538